



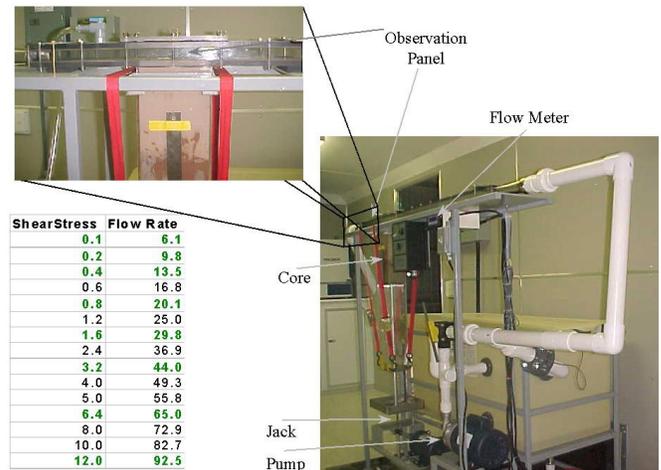
High-Shear Stress Flume Development

Description

Sandia National Laboratory designed and constructed a mobile high-shear, unidirectional flume and erosion testing device, including measurement instruments, which is fully contained within a towable trailer.

Purpose

A facility is needed to perform erosion experiments on mixed sediments under high-shear stress conditions. Such a facility is a critical element of the U.S. Army Corps of Engineers Coastal & Hydraulic Laboratory's research thrust in the areas of sediment transport, dredged material stability and fate, and regional sediment management. Districts often require authorization to use an offshore dredged material placement site. This authorization depends on an assessment of storm-induced erosion, as does the success of near-shore dredged material placement, which is intended to either remain stable or provide a source of material to the beach system. This facility is also needed to perform program research to improve present state-of-the-art technology in estimating cohesive and mixed cohesive/non-cohesive sediment erosion in high-shear environments. Research using this facility will lead to development of better predictive methods which will often preclude the need for site specific testing, thus reducing costs and time required for districts to obtain site authorization.



Mobile, High-Shear, Unidirectional Flume and Erosion Testing Device

This facility has been utilized on the Housatonic River, MA, Kivalina Bay, AK, and the Pecos River, NM.

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Contact

Jesse Roberts
Carlsbad Programs Group
4100 National Parks Highway
Carlsbad, NM 88220
Phone: (505) 284-2710
Fax: (505) 234-0061
Email: jdrober@sandia.gov

